
Jo Fraley
jfraley@esri.com
Bomb Threat Analysis Example

Agenda

- **Bomb Threat Stand-Off Distances**
- **Bomb Threat Example Application**
- **What it took to build**
  - ArcGIS Runtime SDK for .NET
  - Options for applications
  - Creating packages
  - Functionality
  - Deploying applications
Bomb Threat Analysis Example

Demo
ArcGIS Runtime SDK for .NET
ArcGIS Runtime

• Runtime built using C++
  - Exploits the capabilities of the device

• Functionality exposed to developers via an API native to the platform
  - Intuitive to learn

• Common functionality set and conceptual model
  - Eases multi platform development
Device Platforms

Phone  Tablet  Desktop  Embedded
Windows Desktop API

- Build native apps for the Windows Desktop platform
- Windows Presentation Foundation (WPF)
- .NET 4.5
- 64-bit and 32-bit
- Task-based Async Pattern
- Designed for MVVM
- Codebase shared with APIs for Store apps and Phone
- Full capabilities of the ArcGIS Runtime
  - Plus LocalServer for advanced Geoprocessing
Functionality Overview

• Build a map
• Edit
• Search/Query
• Geocoding and Routing
• Perform analysis
Options for applications

- All local services
- All external services
- Combination of both

Online connected

Offline disconnected
Local Data Sources

- Map package: MPK
- Tile package: TPK
- Geoprocessing package: GPK
- Locator package: GCPK
Packages for local services
Packages for local services

LocalMapService schoolsAndhospitals = new LocalMapService(apppath + "\MapFeatures.mpk");

    await schoolsAndhospitals.StartAsync();
    ArcGISDynamicMapServiceLayer arcGISDynamicMapServiceLayer = new ArcGISDynamicMapServiceLayer()
    {
        ID = "schoolsAndhospitals",
        ServiceUri = schoolsAndhospitals.UrlMapService,
    };
    arcGISDynamicMapServiceLayer.IsVisible = false;
    mapView.Map.Layers.Add(arcGISDynamicMapServiceLayer);
Using the Geometry Engine

- Create geometries from existing geometries by performing operations
  - Buffer, Clip, Densify, Difference, Offset, Union, Intersection, Symmetric Difference, and Simplify
- Basic relationships
  - Contains, Crosses, Disjoint, Intersects, Overlaps, Touches, Within, and Equals
- Project to different spatial references

```javascript
var bufferInside = GeometryEngine.Buffer(geom, BuildingEvacDistance);
```
Using the QueryTask

```csharp
ArcGISDynamicMapServiceLayer localLayer = mapView.Map.Layers["schoolsAndhospitals"] as ArcGISDynamicMapServiceLayer;
var queryTask = new QueryTask(new Uri(localLayer.ServiceUri + "/0");
var query = new Query("1=1")
{
    ReturnGeometry = true,
    OutSpatialReference = mapView.SpatialReference,
    Geometry = outsideBuffer,
};
query.OutFields.AddRange(new string[] { "NAME" });

graphicSchool.Renderer = new SimpleRenderer() { Symbol = new SimpleMarkerSymbol()
    { Color = Color.FromRrgb(255, 0, 0), Size = 8 } };
var queryResult = await queryTask.ExecuteAsync(query);
if (queryResult != null && queryResult.FeatureSet != null)
{
    graphicSchool.Graphics.AddRange(queryResult.FeatureSet.Features);
}
```
Using a SceneView

<esri:SceneView x:Name="sceneView" Visibility="Hidden">
  <esri:Scene x:Name="map">
    <esri:ElevationLayer ServiceUri="http://services.arcgisonline.com/arcgis/rest/dire
    <esri:ArcGISTiledMapServiceLayer x:Name="myService" ServiceUri="http://serv
    <esri:SceneLayer x:Name="myscenelayer" ServiceUri="http://burlo.esri.com/arc
    <esri:GraphicsLayer x:Name="myPointandText"/>
  </esri:Scene>
</esri:SceneView>
Drawing Threat Dome

SphereSymbol sphere = new SphereSymbol();
sphere.Color = Color.FromArgb(155, 255, 0, 0);
sphere.LatLOD = 10;
sphere.LonLOD = 10;
sphere.Radius = (float)OutdoorEvacDistance; //in meters
sphere.SpherePosition = RuntimeCoreNet.SpherePosition.Center;
Graphic graphic = new Graphic { Geometry = e.Location, Symbol = sphere };
Sessions on the ArcGIS Runtime SDK for Microsoft .NET Framework

• Developing Mobile Apps with ArcGIS Runtime SDK for Microsoft .NET Framework
  - Thursday, July 17, 2014, 10:15 am – 11:30 am
  - Location: Room 5A
Thank you...

• Please fill out the session survey:


Paper – pick up and put in drop box